

CLAIMS

1. A culture medium for culturing neural stem cells comprising hepatocyte growth factor (HGF).

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2. The culture medium of claim 1, further comprising another growth factor in addition to HGF.

3. The culture medium of claim 2, wherein the growth factor
10 is selected from the group consisting of fibroblast growth factor-2 (FGF-2) and epidermal growth factor (EGF).

15 4. A method for culturing neural stem cells comprising the step of culturing a neural stem cell or a population of cells comprising at least one neural stem cell in the growth medium of any one of claims 1 to 3.

20 5. A method for proliferating neural stem cells comprising the step of culturing a neural stem cell or a population of cells comprising at least one neural stem cell in the growth medium of any one of claims 1 to 3 under conditions that allow the proliferation of the neural stem cell.

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6. A method for differentiating neural stem cells

comprising the step of culturing a neural stem cell or a population of cells comprising at least one neural stem cell in the growth medium of any one of claims 1 to 3 under conditions that allow the differentiation of the neural stem cell into a population of cells containing neurons and glia cells.

7. The method of any one of claims 4 to 6, wherein the neural stem cell is derived from mammalian neural tissue selected from the group consisting of brainstem, cerebellum, cerebral cortex, midbrain, spinal cord and ventricular.

8. The method of any one of claims 4 to 7, wherein the neural stem cell is genetically modified.

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9. A method of treating a neurological disorder using a neural stem cell or a population of cells comprising at least one neural stem cell cultured in the medium of any one of claims 1 to 3.

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10. The method of claim 9, wherein the cell population is enriched in neural stem cells.

11. The method of claim 9, wherein the cell population is enriched in neurons.

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12. The method of any one of claims 9 to 11, wherein the neurological disorder to be treated is selected from the group consisting of epilepsy, head trauma, stroke, amyotrophic lateral sclerosis, Parkinson's disease, 5 Alzheimer's disease and Huntington's disease.

13. The method of any one of claims 9 to 12, wherein the neurological disorder is treated by transplantation of at least one of the cell population.